ON BUYING A C

By ROBERT R. ALLEN

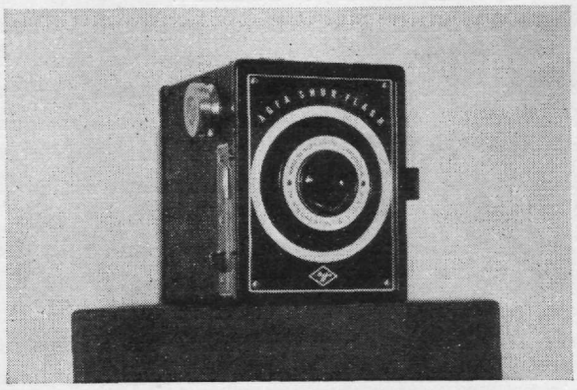


Fig. 1

The average person who buys a camera considers the purchase for awhile, then goes to the nearest store, and after looking at a line of rather glittering merchandise, makes a choice. The probability that he has selected a camera that is suited to his purpose is one in ten.

Unfortunately, it is true that many camera salesmen are interested only in making a sale. It would be more to the interest of a store to have a good customer who was seriously interested in photography, than to think too avidly of the profit to be made from an initial sale. In this erroneous attitude of selling the public, it may be said that the merchandiser is not wholly at fault but some of the manufacturers as well. In recent years, there was one camera company that sold more than a hundred thousand models of a camera, ninety per cent of these cameras would not take a good picture due to defective shutters. It is needless to state that both the manufacturer and the retailer made money on the initial sale, but they lost thousand of dollars profit on potentially good customers whose confidence they had alienated.

Since this discussion is to be in as non-technical a vein as possible, we will discuss only the essential principles of the operation of a camera.

For our purposes it is possible to divide cameras into two general classes. In the first classification we will put those cameras in which simplicity of operation and economy have been stressed, such as those which do not require adjustment of shutter speeds and whose diaphragm and focusing controls are very simple. In Fig. 1 is illustrated a camera of this type which is highly recommended for the inexperienced photographer.

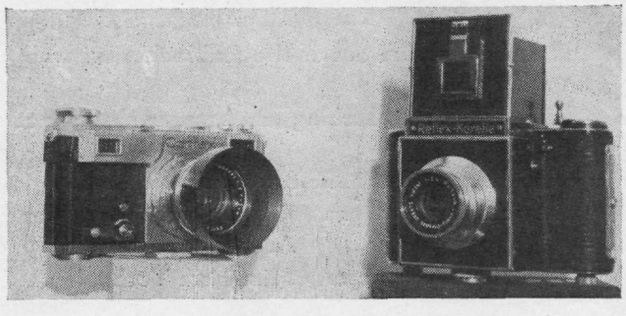
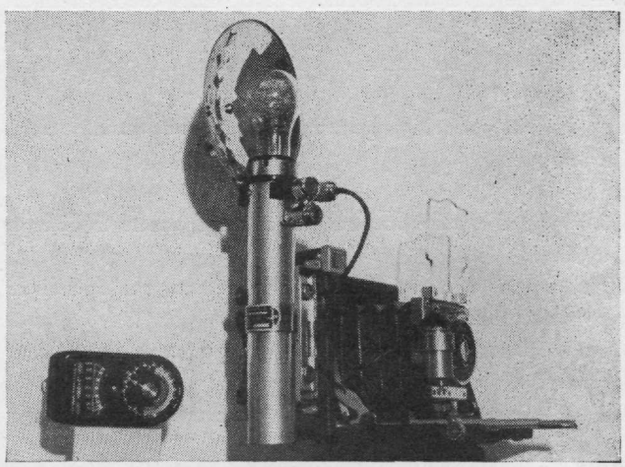


Fig. 1

Although the camera illustrated is generally known as a box camera, it is entirely as good and usually cheaper than many of the models on the market which are advertised as candid-type cameras. Most of these inexpensive so-called candid-type cameras are merely an attractive bakelite body which houses a lens and shutter of the approximate or poorer quality than those in a good box camera.

In recent years the great impetus given to photography by improved films and equipment has caused many new manufacturing concerns to invade this field in the hope of quick profits. In no case can their products be recommended as highly as the products of manufacturers of an established reputation. Their greatest effect on photography has been to cause a lowering of the standards along with the lower price.

Now let us discuss the second general classification of cameras in which we have those requiring several adjustments (usually three) and a considerably higher cost than cameras of the first general class.



Before it is possible to make an intelligent analysis of this type of camera it is essential to understand some of the theory of their operation. In this type camera many people are liable to over-emphasize the value of a fast lens. The speed of a lens is usually expressed as a number, which is simply the ratio between the effective diaphragm opening and the focal length of the lens.

AMERA

$$\text{Speed of lens} = \frac{\text{f-number} = \text{Focal length}}{\text{Diameter of opening}}$$

The focal length of the lens is constant. Therefore, the only way to vary the speed of the lens, or f-number as it is commonly called, is to change the value for the diameter of the opening. Obviously the larger the diaphragm opening, the more light is admitted and

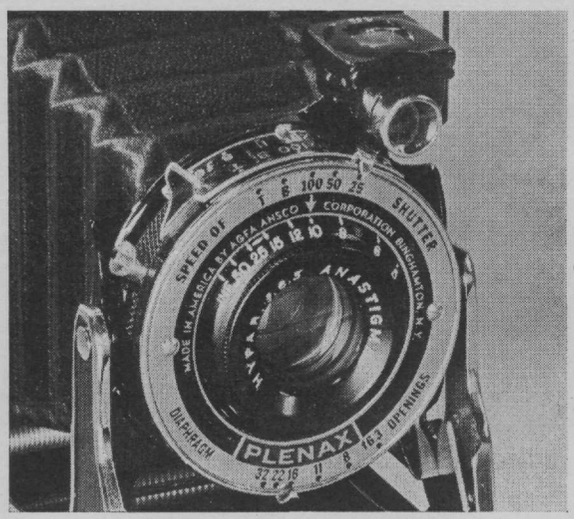
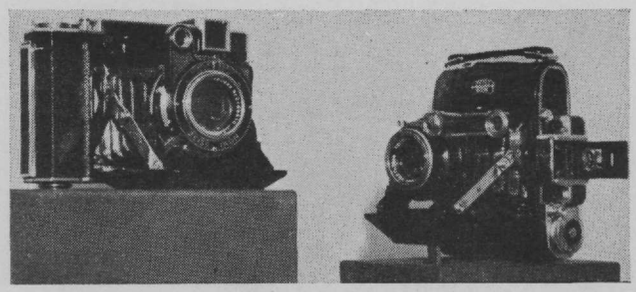


Fig. 2

the faster the lens and the smaller the f-number. This ratio is true for any lens of any focal length. In Fig. 2 is the front of a popular camera which shows clearly the adjustments for different diaphragm openings and different shutter speeds.

The value of a fast lens is that it can be used when light conditions are poor and also it can be used in conjunction with fast shutter speeds to take action photographs. Unfortunately, too much stress is laid upon the necessity of having a fast lens. Most photographs are or should be taken with a small diaphragm opening, and it is seldom that any picture requires a lens faster than f4.5. Many amateurs have a tendency to open the diaphragm as fully as possible and regulate the exposure by means of the shutter-speed. Nothing could be more undesirable, as the imperfections of a lens are usually more pronounced and the depth of field is less for large diaphragm openings. From the standpoint of cost it may be said that one should have the best lens obtainable at the price one intends to pay. In general, the quality of a lens is directly proportional to the cost, providing only the products of reputable manufacturers are considered.

There are two types of shutters in common use; the diaphragm shutter which is mounted in front of, behind,

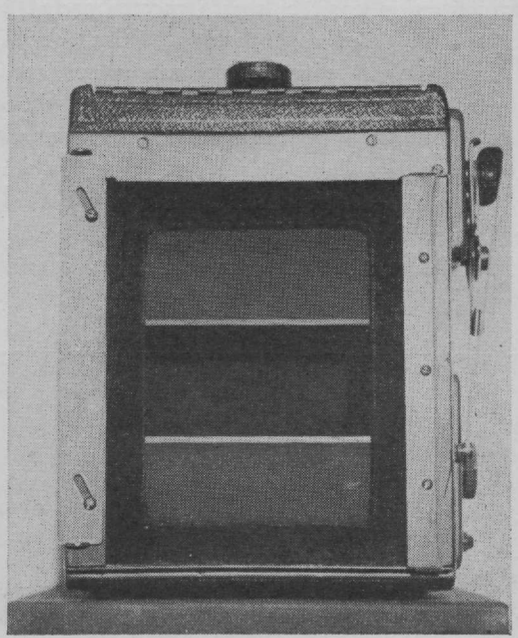


or between the lens elements, and the focal plane shutter which is mounted directly in front of the camera's focal plane and somewhat resembles a roller shade in appearance and operation. The diaphragm shutter is shown in Fig. 2 and the focal plane shutter, is shown in Fig. 3.

The diaphragm shutter is by far the most common and is entirely adequate for most purposes. Many years ago the focal plane shutter was considered the better type because of its apparently more even exposure of the negative. Due to great mechanical improvement, the efficiency of the diaphragm shutter has been increased until it is on a level with the focal plane type. The present outstanding feature of the focal plane shutter is its adaptability to lens assemblies of various focal lengths. Should you anticipate the need to use lenses of several focal lengths, this feature would be an advantage. However, cameras having a focal plane shutter are quite expensive and while several popular priced models now have this feature they cannot be recommended.

There are four types of camera construction in common use at the present time. Of these the most common is sheet metal. This is usually a good buy as it is quite economical, compact, and has the ability to

Fig. 3

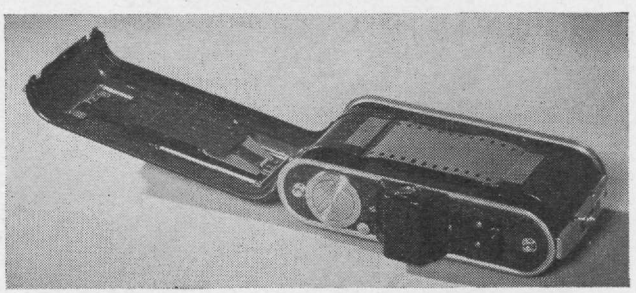


Even a Built In Flash Gun can be had

withstand considerable hard usage. This latter advantage is of great importance as it detracts from the pleasure to be had from photography if it is necessary to nurse a frail instrument which may be harmed by common use.

Another type of construction is the bakelite or molded type. This is becoming increasingly popular, especially in cameras belonging to the first general classification listed. The reasons for its popularity are its adaptability to many different shapes and so-called streamlining, and the fact that it adapts itself readily to mass production. Because of the low resistance bakelite has to breakage due to shock, it cannot be very highly recommended for any camera.

Probably the best basic construction is the high grade aluminum alloy die casting. In this there is high regard for mechanical accuracy. The casting is strong and light and may be made in a variety of shapes. This construction can be highly recommended but is usually several times as expensive as the sheet metal type. In the past several years many cameras have appeared on the market which have been advertised as die-cast. They may be technically die-castings, however, many of them have been made from the cheapest materials and are little better than the bakelite type. These low-grade die-castings can usually be distinguished by their rather poor finish and their relatively great weight.



The last type of construction in general use is the combination of wood and metal used in the Graflex camera. Since the Graflex camera is primarily intended for the use of news photographers and advanced amateurs, it will not be discussed here.

As a summary of the types of basic construction, it should be remembered that only in a very high priced camera is it possible to obtain a high quality die-cast carcass, and since the sheet metal type will answer the needs of most amateurs, it is worthy of very high recommendation.

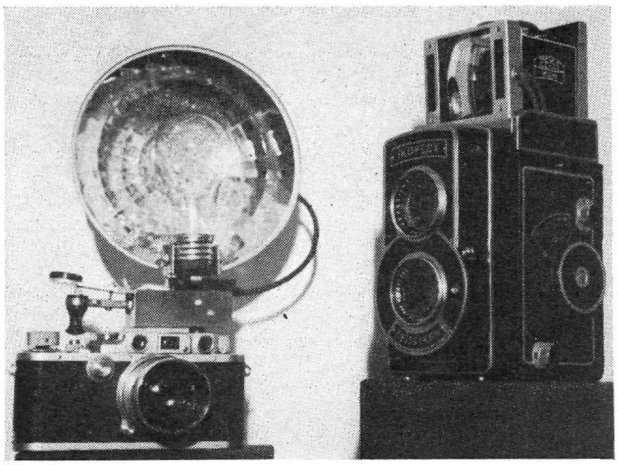
The function of a view finder on a camera is to enable the photographer to view his subject before he makes the exposure. There are several types of view finders in common use. Probably the most common type is the optical variety. For most general purposes this is entirely satisfactory. Another type is the frame or wire finder. This is usually used on the less expensive cameras. The third type in common use is the coupled rangefinder. This is a considerably more elaborate and expensive mechanism than either the optical or frame finder.

Some with Leather Bellows

The advantage of the coupled rangefinder is that it is possible to focus the lens for the proper distance at the same time that the subject is viewed through the rangefinder. It is evident that a coupled rangefinder will usually simplify the focusing of a camera. However, there are several disadvantages. In the first place a coupled rangefinder should be well made to be of maximum use and this is liable to be quite expensive. Many experienced photographers seldom use a coupled rangefinder, as they prefer to estimate the proper distance. Whether or not to buy a camera with this feature is a matter which must be left up to the individual and he should thoroughly examine the several types before deciding.

The frame finder has a distinct advantage over all other types in that it is easier to use when light conditions are poor or when one is taking pictures by flash bulbs. Some of the better cameras are equipped with a frame finder in addition to one of the other types.

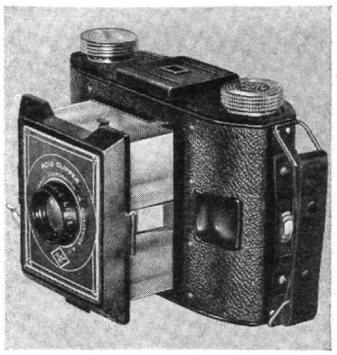
A most important consideration in buying a camera of any kind is the availability of accessories at a cost commensurate with the initial cost of the camera. It



is on this point that many of the smaller manufacturers and those not specializing in cameras are weak. In many cases, it is not possible to obtain accessories or the price is prohibitive. Along this same line of thought, it should be noted whether the camera is readily adaptable to a synchronizer for flash photography.

No discussion of cameras would be complete without reference to candid photography. This is one of our most abused words. Often a reference is made to a camera as being candid. There is no such thing as a candid camera. The word candid refers to a certain

And Some without Leather Bellows



type of photography which has been practiced for many years. Probably the reason this phrase has become so popular recently is the emphasis with which it has been used in much camera advertising. It is perfectly possible to take candid photographs using the most inexpensive box camera. Let us not be misled by technical sounding phrases.

As a general summary of this entire discussion of selecting a camera it should be borne in mind that there is no camera which has all the advantages. It is necessary to examine many models thoroughly and buy that one which has all the desirable features possible at the price one intends to pay.

Photos courtesy Agfa Ansco Corp. and Candid Camera Shop, 46 E. Broad St. The author will answer inquiries addressed to The Ohio State Engineer, Engineering Experiment Station, Ohio State University, Columbus, Ohio.